

*Department of Information & Statistics  
Baruch College Zicklin School of Business  
City University of New York*

OPR 9730  
Simulation Modeling and Analysis  
Spring 2017

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Textbook: *Simulation with Arena* 6th Edition by W. David Kelton, Randall Sadowski, Nancy Zupick. McGraw Hill 2014.

Syllabus - Tentative

Description: Every phase of a simulation study is examined in detail: problem definition, data collection, model building, model validation, experimental design, simulation, output analysis. Close attention is paid to the simulation experimental design, including such concerns as sample size/run-length determination and variance reduction. Simulation assignments, including a term project, are geared toward a particular special purpose simulation language such as SIMSCRIPT. Case studies, such as inventory systems, hospital systems, manufacturing, telecommunication, public policy, and / or large scale models, are discussed.

Course Objectives: The primary learning objective of this course is to develop students' analytic skills, particularly as applied to system simulation experiments. Students will gain practical experience with simulation programming.

**Course Outline**

Introduction to Modeling  
Introduction to Simulation  
Simulation Programming in Arena  
Selecting the Input Data Probability Distribution  
Designing the Simulation Experiment  
Statistical Analysis of Simulation Output  
Validation & Verification of Simulation Models

Grading (Tentative):

Exams and quizzes– 50%

Simulation Assignments – 10%

Term Project – 20%

Other Homework – 10%

Class participation – 5%

ACADEMIC HONESTY: The Department of Information Systems & Statistics fully supports Baruch College's policy on Academic Honesty, which states, in part: "Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college's educational mission and the students' personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned." Additional information may be found at [http://www.baruch.cuny.edu/academic/academic\\_honesty.html](http://www.baruch.cuny.edu/academic/academic_honesty.html)